



State of Montana
Montana State Library

2012 Agency Biennial IT Report
Fiscal Year 2011-2012

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EXECUTIVE SUMMARY

Introduction

The Montana State Library is committed to strengthening libraries and information services for all Montanans through leadership, advocacy, and service. Information technology is integrated into nearly every function of the State Library, from the storage of digital content to the delivery of library services in various forms. The programs of the library rely heavily on the state network, on MSL's servers and storage area network (SAN) and on Internet technologies to support their business goals.

Meeting Current Business Challenges

IT resources at MSL have been very focused over the last several of years on upgrading legacy systems both in terms of hardware upgrades as well as electronic resources development and enhancement. During the process of upgrading legacy hardware, MSL has implemented a virtual server environment and wherever possible, new systems are being rolled out onto virtual servers. This investment in upgrading legacy systems is in response to the business concerns faced by MSL programs:

- The Montana Shared Catalog (MSC) membership surpassed 150 libraries and it continues to grow. At the same time its hardware and software components reached the end of their natural lifespan so these core components are now being replaced. Ensuring the longevity of this system is critical because it now serves more than 403,000 Montana patrons. MSL recently completed an RFP process and signed a new agreement with the existing vendor, SirsiDynix, for continued service.
- The Montana Natural Resource Information System (NRIS) and the Base Map Service Center (BMSC) have been combined to create MSL Geographic Information. This group has already realized efficiencies through the consolidation of redundant data files and databases. They are currently working on developing a consolidated GIS and database server environment at MSL that will result in additional cost savings. Further, MSL is working with other state agency GIS managers to develop a more efficient and cost effective state Enterprise GIS environment.
- The Library Information Services (LIS) program continues to digitize its entire print state publications legacy collection (35,000 volumes) requiring additional terabytes of storage. The result of digitizing this collection is that Montana's state government publications are being used at rates more than 40 times higher than use of their print equivalent.
- The Talking Book Library (TBL) is gradually converting its collection from analog to digital media to meet user demands and to remain consistent with its national counterparts. This requires new software, hardware and storage solutions that can accommodate new playback devices, new media and new file formats.
- The Statewide Library Resources (SLR) Division continually seeks ways to reduce costs and add value to the resources, training and consulting services it provides to libraries throughout the state. SLR facilitates access to online content for Montana libraries through statewide

subscriptions for online databases and e-content. The division is now investing in the use of online collaboration tools and Web 2.0. Additionally, SLR upgraded training labs during FY12. This includes both an in-house lab and a traveling laptop lab.

- MSL continues to seek opportunities to take advantage of the new State of Montana Data Center (SMDC). Though it is still not a viable solution for many systems in place at MSL, we have recently placed a mirrored SAN in the SMDC to provide off-site back-up and MSL Geographic Information has been using the Enterprise GIS environment housed at the data center to serve public facing Montana Spatial Data Infrastructure (MSDI) Framework data.

Because MSL is a small agency, our information technology projects generally do not meet the definition of Strategic IT Initiatives as defined by the IT Plan. Nonetheless, each is critical to our patrons and partners and thus deserves the highest degree of professionalism in planning, implementation, ongoing administration and care.

Initiative Status	Total	Fully Funded	Unfunded	Partially Funded
Completed	0	0	0	0
Substantially Completed	0	0	0	0
Deferred	0	0	0	0
Delayed	0	0	0	0
Cancelled	0	0	0	0
Remain on-going by design	1	0	0	1

SECTION 1: AGENCY IT PLAN ACCOMPLISHMENTS – GOALS & OBJECTIVES

Goal Number 1:

IT Goal 1 Align information system resources with MSL program and service needs

Description: This on-going goal aligns current information system resources with MSL program and service needs and appropriately deploys information technology solutions within the scope of MSL strategic plan and personnel and financial resources

Benefits: MSL staff benefit by having the resources we need to carry out our work without overextending limited personnel and financial resources. MSL partners and patrons benefit by having reliable access to high quality content and services. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government.

Supports/Implements State IT Goals: 1, 2

Supporting Objective/Action

Objective 1-1 Evaluate information system resources currently maintained by MSL against MSL program and service needs to find opportunities for greater efficiency

Accomplishments: All critical success factors listed for this objective in the 2010 plan have been met or exceeded. In many cases where the plan was to evaluate options, MSL has gone far beyond that and implemented solutions based on those evaluations. MSL has replaced the old SAN and backup equipment with a pair of SANs in a mirrored arrangement with one housed at the SMDC. This arrangement provides a level of security for disaster recovery as well as an opportunity to interface with services available through SITSD. MSL has also implemented a virtual server environment and the many legacy systems have been migrated to virtual hosts. We do list this as both completed and ongoing because the success factors have been achieved, but we continue to evaluate MSL program needs and the resources available to meet those needs. 100% Complete.

Status: Completed, On-going

Supporting Objective/Action

Objective 1-2 Evaluate external IT resources against MSL program and service needs

Accomplishments: Again, MSL has evaluated all of these options and in some cases implemented solutions based on those evaluations such as moving the mirrored SAN to the SMDC. MSL has also been actively involved in the GIS Cloud initiative, and has worked with Federal partners as well as partners from other states to identify solution for spatial data archiving. As program needs change and as technology environments evolve MSL continue to look for opportunities to take advantage of or partner with external entities for more effective and efficient IT operations. 100% Complete.

Status: Completed, On-going

Supporting Objective/Action

Objective 1-3 Use the agency strategic planning process to identify priorities for new and/or expanded information systems.

Accomplishments: The new MSL Long Range Plan can be found at:
http://msl.mt.gov/About_MSL/Long_Range_Plan/LRP12-22_Final.pdf

100% complete

Status: Completed, On-going

Supporting Objective/Action

Objective 1-4 Encourage staff from all library programs to effectively collaborate across programs in order to use all library information system resources to meet the goals of MSL

Accomplishments: While not sticking directly to the plan, MSL has exceeded to original expectations associated with this objective. Map services have been slower to deploy than originally anticipated due to several factors including increasing map service options and ever changing map server software. The kiosk concept was replaced by “virtual kiosks” or patron “companions” such as the Fishing (<http://msl.mt.gov/fishing/>) and Hunting (<http://msl.mt.gov/hunting/>) Companion sites which pull information from across MSL and partner agency web sites and package it into resources targeted to specific user cases. The use of GIS for library planning has been a great success resulting in the development of an entire gallery of library maps - http://msl.mt.gov/For_Librarians/Maps/Map_Gallery/default.asp.

100% Complete.

Status: Completed, On-going

Goal Number 2:

IT Goal 2 Develop and maintain current and new information systems that are properly aligned with MSL program and service needs

Description: This on-going goal ensures the development and maintenance of information systems that are properly aligned with MSL program and service needs and appropriately deploys information technology solutions within the scope of MSL strategic plan and personnel and financial resources.

Benefits: MSL staff benefit by having the resources we need to carry out our work without overextending limited personnel and financial resources. Information systems and the associated resources are clearly justifiable; therefore personnel and financial resources are made available to ensure the long term success of the information systems. MSL partners and patrons benefit by having reliable access to high quality content and services. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government.

Supports/Implements State IT Goals: 1, 2,4

Supporting Objective/Action

Objective 2-1 Maintain the MSL information technology plan

Accomplishments: MSL produced a 2010 Agency IT plan:

http://itsd.mt.gov/stratplan/agencyplans2010/State_Library/default.mcp

as well as a 2011 IT Plan update:

(http://sitsd.mt.gov/content/stratplan/agencyplans2010/State_Library/2011_IT_Plan_MSL_Update)

and a 2012-2017 IT plan:

(http://sitsd.mt.gov/content/stratplan/agencyplans2012/MSL/MSL_2012_Agency_IT_Plan_Final.pdf)

in addition to producing this report on the effectiveness of the 2010 plan. 100% Complete.

Status: Completed

Supporting Objective/Action

Objective 2-2 Participate in IT governance and relevant Communities of Interest

Accomplishments: In addition to participating in the groups originally identified (and listed below), MSL has been involved in the Service Oriented Architecture working group, the GIS Cloud RFI process, and the

Mobile Computing work group.

- Director or agency CIO attendance at ITB, E-Government Advisory Council and MLIAC;
- CIO or Network Administrator attendance at ITMC;
- NRIS Manager attendance at GIS Managers Forum;
- Web Manager attendance at Web Developers meetings;
- Involvement in future IT committees and communities of interest.

100% Complete.

Status: Completed, On-going

Supporting Objective/Action

Objective 2-3 Consult with Department of Administration when evaluating new information systems to support the MSL Strategic Plan

Accomplishments: MSL regularly meets with the SITSD CRM as well as the state GIO and others. MSL worked with SITSD to develop unique solution to GIS imagery data storage which allows MSL direct access to the data, minimizes data redundancy, and is cost effective for MSL. 100% Complete.

Status: Completed, On-going

Supporting Objective/Action

Objective 2-4 Comply with all relevant Enterprise IT standards and policies that align with MSL business needs and support MSL programs and services

Accomplishments: MSL passes compliance audits and is able to negotiate exceptions to Enterprise standards when needed to meet industry requirements or patrons' expectations. 100% Complete.

Status: Completed, On-going

Supporting Objective/Action

Objective 2-5 Implement Project Management as a means to proactively manage information systems and projects

Accomplishments: MSL has evaluated several project management tools and some staff has even attended project management training. At this point we still struggle to find a good, easy to learn and use tool that provides the needed functionality for MSL projects that tend to be small, but often involving many external partners. We will continue to seek tools that help with the project management process.

A more integrated project management environment is pending the formal adoption of a set of project management tools by the agency. Even so, a project management approach was taken for both the updated GIS portal roll-out as well as for MSL participation as a partner in the GeoMAPP project.

MSL has attended occasional PMOAG meetings. MSL will continue to evaluate whether the costs of being involved in the PMOAG can justify the time commitment required to be an active participant in this group.

75% Complete.

Status: On-going

Supporting Objective/Action

Objective 2-6 Proactive management of hardware and software assets

Accomplishments: Almost all of the critical success factors identified have been accomplished or are nearing completion.

- 80% - MSL staff maintain current documentation on all systems and applications;
- 80% - MSL staff maintain and review back-up routines monthly;

- 25% - MSL staff develop, maintain and test fail-over systems for critical information systems;
- 80% - MSL ensures that all business critical hardware and software assets are protected by maintenance plans and warranties;
- 90% - MSL replaces hardware on a five-year cycle and software as needed and as budget allows;
- 100% - MSL maintains software license compliance across all MSL platforms;
- 100% - MSL SAN: FY2010 year-end IT planning includes an alternative for file storage to replace the SAN. Options currently being considered include a combination of onboard disk space and a NAS device or the services provided by the SMDC. This option depends on the availability, timing and cost of services from ITSD;
- 80% - MSL 10 Blade Servers: Three new were servers purchased in 2009 which replace the functionality provided by SQL and ArcIMS servers. FY2010 year-end IT planning includes an alternative for web servers currently maintained on blades. Options currently being considered include virtual web servers on hardware owned by MSL or through the services provided by the SMDC. This option depends on the availability, timing and cost of services from ITSD;
- 95% - MSLHLNCNTDM01 Server: See SAN;
- Delayed - MSLHLNSCDS Server: Montana Shared Catalog will replace this server when a new version of Directors Station is released in FY2011;
- 100% - Recycle MSLHLNFILEPRN: Replaces MSLHLNMANGE1 (NOD32 Mirror Server) and MSLHLNIMG001 (Symantec Backup Exec Server);
- 99% - Adic Tape Library: FY2010 year-end IT planning includes an alternative for tape backups to replace the Adic Tape Library. The option currently being considered is a Network Attached Storage (NAS) device with an onboard tape drive.

75% Complete.

Status: On-going

Goal Number 3:

IT Goal 3 Expand and improve online information services

Description: Expand and improve online information services that support MSL programs and services, and the programs and services of MSL patrons, partners and related communities of interest.

Benefits: MSL staff, Montana's libraries, government employees, citizens and businesses obtain high quality information services via the web.

Supports/Implements State IT Goals: 1, 2,4

Supporting Objective/Action

Objective 3-1 Improve the overall design and usability of MSL websites and services.

Accomplishments:

- Delayed - By December 2012 launch new MSL website that is reorganized to focus on content rather than MSL programs, that makes available multiple means to access MSL information and services and that incorporates web 2.0 technology;
- Review website content and functionality to develop appropriate mobile applications.

25% Complete.

Status: Ongoing

Supporting Objective/Action

Objective 3-2 Participate in formal State activities that actively support online service delivery

Accomplishments: MSL participates in all of these activities:

- State Librarian or CIO will sit on the E-Government Advisory Council;

- MSL staff will participate in the GIS Manager's Forum;
- MSL staff will participate in the State Web Developer's meetings;
- MSL staff will continue to rely on the Network Advisory Council and the NRIS Advisory Council's expertise to shape MSL online services for our patrons and partners.

100% Complete.

Status: Complete, Ongoing

Supporting Objective/Action

Objective 3-3 Collaborate with partners on projects and services which increase citizen access to public information and library content

Accomplishments: MSL continues to work on all of these projects.

- MSL and the Montana GIS Federation will increase the amount of data, services and other content discoverable through GIS Portal;
- MSL will continue to digitize legacy print collection (35,000 volumes) and will partner with other state agencies to prioritize publications for digitization;
- MSL will implement a single authentication solution to facilitate access to local and statewide commercial and bibliographic databases for both MSL patrons and library patrons statewide. OCLC's EZ-Proxy solution is currently being piloted for this purpose;
- Facilitate access to local and statewide e-content subscriptions; MSL currently manages contracts with a number of vendors including for this purpose;
- Delayed - Research and test options to develop a data.mt.gov data portal to provide online access to State of Montana data, databases and online services;
- Focus resources on the creation of web and web mapping services that can be consumed by state and federal agencies, library patrons and other partners;
- In our role as managers of the Montana Spatial Data Infrastructure, assist framework stewards to create web mapping services that can be consumed by data users;
- Evaluate online services with an eye to develop mobile applications.

100% Complete.

Status: Complete, On-going

Supporting Objective/Action

Objective 3-4 Provide online interfaces that enable partners to contribute feedback regarding MSL projects and services as well as content to MSL collections

Accomplishments: MSL has adopted a social media policy and several programs within MSL have taken advantage of Facebook, Twitter, and Blog software to get information about their services out to user communities and to foster communication with those communities.

100% Complete.

Status: Ongoing

Supporting Objective/Action

Objective 3-5 Create and deliver web services to serve MSL data and the data of MSL partners

Accomplishments: Work on implementing common applications and web services have been delayed somewhat due to turnover in the NRIS web developer position. However, this remains part of the MSL program and IT planning processes and is a priority at all levels within the library.

75% Complete.

Status: Ongoing

Goal Number 4:

IT Goal 4 Develop business continuity and security programs

Description: MSL will develop business continuity and security programs that ensure the integrity of MSL data, protect the privacy of patron information and ensure that MSL services will be available in a timely manner in the event of a disaster

Benefits: MSL staff benefit by having confidence that critical data is maintained and available in the event of information system breakdown. MSL partners and patrons benefit by having reliable access to high quality content and services which are only minimally impacted in the event of information system breakdown. Montana taxpayers benefit through tax savings associated with appropriate use of IT in government which includes appropriate resource management afforded through business continuity and security programs.

Supports/Implements State IT Goals: 1,2,3,4

Supporting Objective/Action

Objective 4-1 Implement a NIST-compliant Information System Security Program

Accomplishments: MSL has worked with the SITSD security officer on a series of Site assistance visits that resulted in a set of recommendations for IT security improvements at MSL. The next step for MSL is to review and prioritize those recommendations.

25% Complete.

Status: On-going.

Supporting Objective/Action

Objective 4-2 Use D-Plan (<http://www.dplan.org/>) to develop an agency wide disaster recovery plan

Accomplishments: MSL is working on all areas identified as critical success factors:

- MSL collections will be evaluated and rated for salvage priorities;
- MSL staff will be trained regarding how to respond to disasters;
- MSL will collaborate with other similar agencies including the Montana Historical Society Research Center to determine ways to support mutual needs in this area.

80% Complete.

Status: Ongoing.

Supporting Objective/Action

Objective 4-3 Develop a long-term access solution for unique digital content held by MSL and other Montana libraries

Accomplishments: MSL has accomplished all of the items identified for success under this objective including subscribing to the OCLC Digital Archive to provide a statewide solution for long-term access of digital masters for libraries around the state and continuing to rely on archive services provided by digitization partner, the Internet Archive for our long-term access to our digital state publications collection. BCR, Inc. is no longer in business but MSL will continue to evaluate other collaborative opportunities to develop a regional network.

100% Complete.

Status: Complete, Ongoing.

Goal Number 5:

IT Goal 5 Improve MSL's ability to attract and retain a qualified IT workforce

Description: The agency will take steps to improve recruitment and retention of IT personnel.

Benefits: MSL's IT staff benefit through opportunities for career growth, learning, and professional development. Employees are recognized, valued, and respected for the contributions they make and are compensated fairly for their work. MSL also benefits through a decreases in employee turnover and loss of organizational knowledge. And critical MSL information systems areas are managed with cross-trained support.

Supports/Implements State IT Goals: 1,3

Supporting Objective/Action

Objective 5-1 Use IT staff in ways that support the MSL Strategic Plan and promote opportunities for collaboration and cross-training both among internal colleagues as well as with MSL partners

Accomplishments: MSL Geographic Information has implemented a cross training program which involves rotating support for information requests and other calls or email for support. Geographic information has also worked with the Director's office to expand administrative use of GIS for state library reporting tasks. MSL has also consolidated agency-wide IT staff under a Digital Information Manager/CIO position that reports to the agency Director.

70% Complete.

Status: Ongoing

Supporting Objective/Action

Objective 5-2 Develop MSL IT staff through investment in training and professional development. Implement training plans for employees that align with MSL's projected information system needs.

Accomplishments: MSL is working to develop agency and program training plans to ensure skilled staff exist across the agency to support and improve the MSL hardware, software, and data environments.

50% Complete.

Status: Ongoing

SECTION 2: IT INITIATIVES STATUS UPDATES

Initiative 1 State Publications Digitization Project

Description: By the end of FY10 MSL will have spent approximately \$100,000 on a long-term project to digitize our legacy print state publications collection. To date these funds have been found within the existing MSL budget. By creating online access to these digital files through the library catalog and major search engines like Google access to state government information is substantially increased and the print copies are protected from further damage or loss. The Montana State Librarian is considering an EPP request for \$680,000 to digitize the complete legacy print collection.

These expenditures includes funding for two contract FTE to support in-house management of the digitization project, shipping costs to ship print documents to a contract digitization vendor via the state contracted shipper and contract costs to pay for the digitization of approximately 40,000 remaining print state publications.

This initiative is directly tied to MSL IT Goal 3: Expand and improve online information services.

EPP Number: NP011

Status: On-going
Funding: Partially Funded

SECTION 3: ADDITIONAL INFORMATION - OPTIONAL

Other types of information that your agency may wish to report as accomplishments or challenges related to achieving the Goals, Objectives, and Initiatives outlined in your 2010 IT plan and 2011 IT plan update.